New species of the genera *Amblytelus* Erichson, 1842 and *Dystrichothorax* Blackburn, 1892 from Queensland and New South Wales, Australia (Insecta: Coleoptera: Carabidae: Psydrini: Amblytelina)

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ABSTRACT

Five new species of the amblyteline genera *Amblytelus* Erichson, 1842 and *Dystrichothorax* Blackburn, 1892 are described from southern Queensland and northern New South Wales, Australia: *Amblytelus suturalis*, *Dystrichothorax trisetosus*, and *D. rufinus* from New England NP, northern New South Wales, and *D. wrightae* and *D. capitis* from localites in the Border Ranges about 100 km south-west of Brisbane, south-east Queensland. The species are introduced into the keys to the Australian species of the respective genera. ❐ *Coleoptera, Carabidae, Psydrini, Amblytelina, Amblytelus, Dystrichothorax, new species, Australia*

This is another supplement to the papers on the Australian amblyteline Psydrini (Baehr 2005, 2006a, 2006b, 2008), and the style and format of the descriptions exactly correspond to those in the revision (Baehr 2005). This paper also gives additional information about the Australian amblytelines, their morphology, distribution, and habits.

The psydrine subtribe Amblytelina is restricted to Australia and is notable for its arboricolous habits and its similar habitus and colouration to the arboricolous lebiine and cyclosomine genera *Agonocheila* Chaudoir, 1848, *Demetrida* White, 1846, *Philophlaeus* Chaudoir, 1844, *Trigonothops* Macleay, 1864, and *Sarothrocrepis* Chaudoir, 1850. The subtribe includes six genera of which *Amblytelus* Erichson, 1842 and *Dystrichothorax* Blackburn, 1892 are widely distributed and numerous in terms of species, whereas the four other genera include few or single species and possess restricted ranges.

The genus *Amblytelus* at present includes 47 taxa which are distributed through southern Australia including the Southwest and Tasmania, and along the east coast up to North Queensland. The genus *Dystrichothorax* includes 49 taxa which are distributed along the east coast of Australia from Tasmania and southern Victoria to North Queensland, where several species occur on Atherton, Carbine, and Windsor Tablelands, respectively, but not further north.

The species of both genera live on tree trunks, either under bark of bark-shedding eucalypts in dry sclerophyll forests and woodland, or on (moss covered) tree trunks in wet sclerophyll forest and rain forest. In particular the rain forest inhabiting species apparently possess quite restricted ranges on single or few mountain

tops or tablelands, many of these species are rare in collections. This may be due either to their actual restricted ranges, or to inadequate sampling efforts. Rain forest dwelling species are best collected by pyrethrum fogging which has been comprehensive only in a few areas, and limited in others.

Workers of Queensland Museum, however, are reknowned for this collecting method. Consequently, they repeatedly detect additional species, as well as improving our knowledge of distribution and ecology of this beetle group. A sample of Australian Psydrini sent from the Queensland Museum, Brisbane, contained not only some rare described species, but also five new species which are described in this paper.

METHODS

For the taxonomic treatment, standard methods were used. The genitalia were removed from specimens relaxed for a night in a jar under moist atmosphere, then cleaned for a short while in hot 10% KOH. The habitus photographs were taken with a digital camera using ProgRes CapturePro 2.6 and AutoMontage and subsequently edited with Corel Photo Paint X4.

Measurements were taken using a stereo microscope with an ocular micrometer. Length has been measured from the apex of the labrum to the apex of the elytra. Length of pronotum was measured along midline. Length of elytra was taken from the most advanced part of the humerus to the most advanced part of the apex.

The holotypes are stored at the Queensland Museum, Brisbane (QM), a few paratypes are deposited in the working collection of the author in the Zoologische Staatssammlung, München (CBM). Label data of specimens are given verbatim, including all ciphers and printed labels. Also original spelling of the collecting date is used.

Abbreviations. ab, ambulatory setae on male and female terminal abdominal sternite; el, fixed setae on 3rd, 5th, and 7th elytral intervals; pr, anterior and posterior marginal setae on pronotum; CBM, working collection M. Baehr in Zoologische Staatssammlung, München; QM, Queensland Museum, Brisbane; NSW, New South Wales; QLD, Queensland; >, larger or longer than; <, smaller or shorter than.

Genus *Amblytelus* Erichson, 1842

Erichson. 1842: 129. – Baehr 2005: 26.

Type species. *Carabus curtus* Fabricius, 1801, by monotypy.

Diagnosis. Characterised within the subtribe Amblytelini by deeply cleft and densely squamose 4th tarsomeres and presence of two marginal setae on the pronotum. Within the genus external structure, e.g. body shape, chaetotaxy, colouration and elytral colour pattern, and structure of the male genitalia are remarkably variable, which justify the distinction of several rather well defined species-groups.

Note. The genus occurs in the southern part of Western Australia, southern South Australia, Victoria, Tasmania, Australian Capital Territory, eastern New South Wales, and eastern Queensland. At present the genus includes 43 species and 4 additional subspecies.

Amblytelus suturalis sp. nov.
(Figs 1, 6)

Material. HOLOTYPE: ♂, NSW: 30.492°Sx152.406°E New England NP, Banksia Pt, 1480 m, 14 Jun 2009 G.Monteith & F.Turco. Pyrethrum Knockdown. Nothofagus forest 17476' (QMT 234154). Paratype: ♀, NSW: 30°29'42''S, 152°21'27'' Point Lookout Rd, radar beacon, 1390 m, 13-14 Nov 2008. G.Monteith. Pyrethrum, trees, open forest. (CBM).

Etymology. The name refers to the distinct sutural stripe on the elytra.

Diagnosis. Medium-sized species of the *discoidalis*-group in the sense of Baehr (2005), with distinct, triangular, pale sutural stripe; distinguished from the most similarly patterned *A. marginicollis* Sloane, 1911 by decidedly less explanate lateral margins of the pronotum and longer aedeagus; and from two species with similarly elongate aedeagus (*A. matthewsi* Baehr, 2005 and *A. weiri* Baehr, 2005) by different elytral pattern.

FIGS 1-5. Habitus. Body lengths in brackets. **1.** *Amblytelus suturalis* sp. nov. (6.2 mm). **2.** *Dystrichothorax wrightae* sp. nov. (7.1 mm). **3.** *Dystrichothorax capitis* sp. nov. (7.8 mm). **4.** *Dystrichothorax rufinus* sp. nov. (6.6 mm). **5.** *Dystrichothorax trisetosus* sp. nov. (5.6 mm).

Description. *Measurements.* Length: 5.9-6.2 mm; width: 2.5-2.6 mm. Ratios. Length eye/orbit: 5.7; width/length of pronotum: 1.48-1.52; width base/apex of pronotum: 1.46-1.52; width pronotum/head: 1.33-1.35; length/width of elytra: 1.68; width elytra/pronotum: 1.56.

Colour (Fig. 1). Head and pronotum rufous; elytra almost black, with distinct, triangular, red sutural spot and red lateral margin that includes the 8th interval. Palpi yellow, antenna red with paler 1st antennomere. Femora yellow, tibiae and tarsi slightly darker. Lower surface pale red.

Chaetotaxy. pr: 1, 1; el: 0, 0, 0; ab: 2, 6.

Head (Fig. 1). Of average size, considerably narrower than pronotum, frons in middle convex. Eye very large, laterally markedly protruded. Orbit very short, < 1/5 of length of eye, very oblique, evenly merging into curvature of eye, forming a distinct angle with neck. Labrum anteriorly slightly sinuate. Mandibles short and wide. Submentum unisetose on either side. Tooth of mentum large, wide, rather acute. Glossa apically straight, bisetose, paraglossae hyaline, slightly surpassing glossa. Lacinia with a few strong spines. Both palpi rather short, obliquely cut at apex, impilose. Antenna fairly elongate, surpassing base of pronotum by almost two antennomeres. Median antennomeres c. 2 x as long as wide. Posterior supraorbital seta slightly removed from eye, situated at posterior margin of eye. Frontal furrows rather elongate, deep, rather linear, sinuate. Frons without any impression in middle. Surface impunctate, without microreticulation, very glossy.

Pronotum (Fig. 1). Rather wide, with wide base, disk rather convex, widest diameter about at middle. Apex with very shallow, straight excision, apical angle little protruded, widely rounded. Lateral margin evenly convex, very slightly concave just in front of the basal angle, incurved to apex. Basal angle rectangular, laterally slightly produced. Base in middle convex, slightly sinuate on either side. Apex in middle not margined, base coarsely margined. Marginal channel moderately wide, explanate, slightly widened towards base, margin upturned. Median line distinct but feebly impressed, neither reaching apex nor base. Both, anterior and posterior transversal sulci shallow. Basal grooves linear, slightly oblique, deep, separated from marginal channel. Anterior marginal seta situated slightly in front of middle, at the inner margin of the marginal sulcus. Posterior marginal seta arising at lateral margin on basal angle. Surface impunctate, without microreticulation, very glossy.

Elytra (Fig. 1). Rather elongate, almost parallel sided, barely widened posteriad, disk rather depressed. Humerus angulate, slightly protruded, basal margin gently angulate. Lateral margin at apex convex. Lateral apical fold very strong. All striae complete, though 7th stria weak. Striae impressed, finely crenulate, only 7th stria consisting of a row of punctures; intervals gently convex. Disk without setiferous punctures. Marginal channel with 14 setiferous punctures, series slightly interrupted behind middle, punctures fine. Two additional setiferous punctures located near apex at the ends of striae 2 and 3. Intervals impunctate, with extremely fine, very superficial microreticulation consisting of markedly transverse meshes. Surface very glossy.

Posterior wings. Fully developed.

Lower surface. Metepisternum rather elongate, c. 2.5 x as long as wide at apex.

Male genitalia (Fig. 6). Genital ring asymmetric, with rather narrow apex and angulate, produced lateral angle. Aedeagus elongate, comparatively narrow, depressed, gently sinuate, apex curved slightly to right. Lower surface gently bisinuate. Apex comparatively narrow (in group), very obtuse, evenly curved, about spoon-shaped, slightly turned down at tip. Tip widely sclerotized. Internal sac with some elongate, sclerotized plates at base. Both parameres elongate, with narrow, very elongate apex, with a single, fairly elongate apical seta. Right paramere with one additional short seta at upper margin near apex, left paramere without any additional setae. Left paramere larger and at base wider than right, right paramere very narrow.

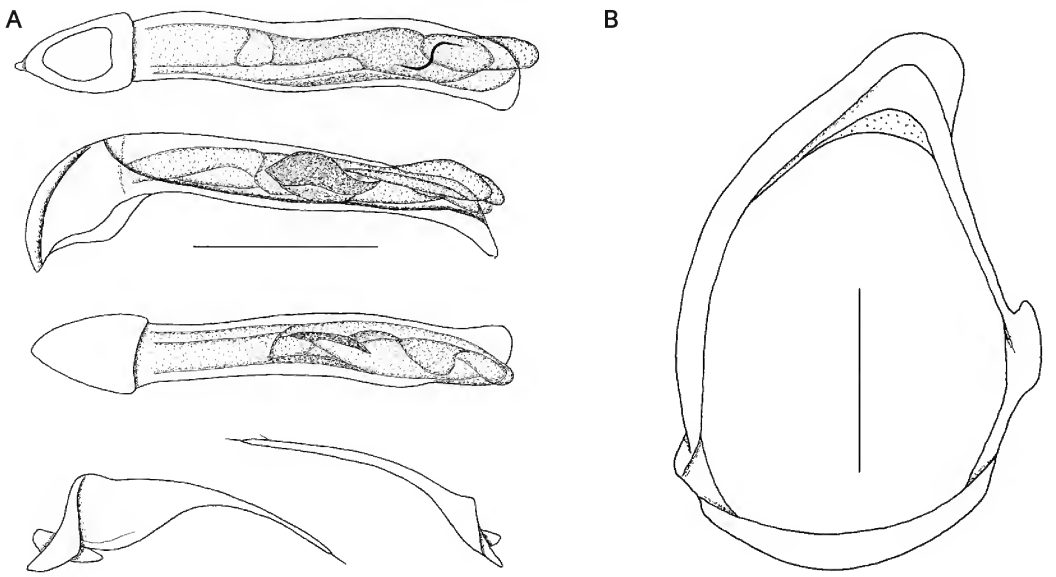

FIG. 6. A-B, *Amblytelus suturalis* sp. nov. **A**, male genitalia; **B**, genital ring

Female gonocoxites. Very similar to those in figs 133-135 in Baehr (2005), but gonocoxite 2 with 3 latero-ventral ensiform setae.

Variation. Apart from some differences in shape of pronotum very little variation noted.

Distribution. New England Tableland, north-eastern New South Wales, Australia.

Collecting circumstances. Both specimens were collected by pyrethrum spraying at high altitude, the holotype in *Nothofagus* forest, the paratype in open forest.

Relationships. With respect to shape of aedeagus most similar to *A. weiri* Baehr, 2005 from Barrington Tops, but the elytral pattern is very similar to that of the sympatric *A. marginicollis* Sloane, 1911.

Genus *Dystrichothorax* Blackburn, 1892

Blackburn, 1892: 86, 88. – Baehr 2005: 128.

Type species. *Amblytelus amplipennis* Macleay, 1871, by original designation.

Diagnosis. Characterised within the subtribe Amblytelini by deeply cleft and densely squamose 4th tarsomeres and absence of the anterior marginal seta of the pronotum. External structure, e.g. body shape, chaetotaxy, colouration and elytral colour pattern, and structure of the male genitalia are moderately different within the genus, which justify the distinction of several rather well defined species-groups.

Note. The genus occurs in eastern Victoria, Tasmania, Australian Capital Territory, eastern New South Wales, and eastern Queensland. At present the genus includes 46 species and additional 3 subspecies.

Dystrichothorax wrightae sp. nov.
(Figs 2, 7)

Material. HOLOTYPE: ♂, QLD: 28.234°Sx152.483°E 'The Head' gate, 820 m 29 Mar 2014. G.Monteith Barkspray, rainfor25495 (QMT 234158). PARATYPES: 1 ♂, 1 ♀, same data (CBM, QM); 2 ♂♂, NSW: 28°29'Sx152°24'E Tooloom Scrub, 720 m 16-17 Aug 2005, 52480 C.Burwell, S.Wright rainforest, pyrethrum (CBM, QM).

Etymology. The name is a patronym in honour of one of the collectors, Susan Wright of Queensland Museum.

Diagnosis. Medium-sized, uniformly rufous species of the *lividus*-group in the sense of Baehr (2005), with comparatively large eye, and with a densely denticulate, triangular fold in the apical part of the internal sac of the aedeagus; distinguished from the very similar *D. catrionae* Baehr, 2005 by narrower, laterally more straight pronotum, slightly longer elytra, more laterad curved, shorter apex of the aedeagus, and different arrangement of the denticulate fold in the internal sac; and from the externally very similar *D. parallelocollis* Baehr, 2005, by presence of the mentioned triangular, denticulate fold.

Description. *Measurements.* Length: 6.7-7.3 mm; width: 2.65-2.95 mm. Ratios. Length eye/orbit: 3.6-3.8; width/length of pronotum: 1.22-1.27; width base/apex of pronotum: 1.54-1.58; width pronotum/head: 1.21-1.25; length/width of elytra: 1.68-1.74; width elytra/pronotum: 1.78-1.83.

Colour (Fig. 2). Reddish-piceous to piceous; pronotum and elytra with narrow, yellow margins. Palpi and antenna more or less pale red, 1st antennomere slightly paler. Femora dark yellow to pale red, tibiae and tarsi slightly darker. Lower surface pale red.

Chaetotaxy. pr: 0, 1; el: 2, 0, 0; ab: 4, 8.

Head (Fig. 2). Rather large, little narrower than pronotum, frons in middle convex. Eye large, laterally well protruded. Orbit short, slightly > 1/4 of length of eye, oblique, evenly merging into curvature of eye, forming a distinct angle with neck. Labrum anteriorly straight. Mandibles short and wide. Submentum bisetose on either side. Tooth of mentum large, wide, rather acute. Glossa apically straight, bisetose, paraglossae hyaline, slightly surpassing glossa. Lacinia with a few strong spines. Both palpi rather short, obliquely cut at apex, impilose. Antenna elongate, surpassing base of pronotum by almost three antennomeres. Median antennomeres > 2.5 x as long as wide. Posterior supraorbital seta slightly removed from eye, situated at posterior margin of eye. Frontal furrows rather elongate, deep, linear, slightly oblique and sinuate. Frons without any distinct impression in middle. Surface impunctate, without microreticulation, very glossy.

Pronotum (Fig. 2). Narrow, rather quadrate with wide base, disk rather convex, widest diameter at base, or base at least barely narrower than at middle. Apex with very shallow, straight excision, apical angle little protruded, widely rounded. Lateral margin in basal half straight or almost so, extremely slightly concave just in front of the basal angle, incurved to apex. Basal angle rectangular, laterally feebly produced. Base in middle convex, laterally slightly sinuate. Apex not margined, base coarsely margined. Marginal channel rather narrow, deep, slightly widened towards base, margin upturned. Median line distinct and slightly impressed, almost reaching apex and base. Both anterior and posterior transversal sulci very shallow. Basal grooves linear, almost straight, deep, separated from marginal channel. Posterior lateral seta arising at lateral margin on basal angle. Surface with very fine transverse strioles, impunctate, without microreticulation, very glossy.

Elytra (Fig. 2). Rather elongate, gently oval shaped, slightly widened posteriad, disk moderately convex. Humerus angulate, slightly protruded, basal margin gently angulate. Lateral margin at apex convex. Lateral apical fold strong. Six median striae present, 7th stria barely perceptible or absent. Striae slightly impressed but less so in basal half, finely, more or less perceptibly punctulate. Intervals in basal half rather depressed, in apical half gently convex. Disk with two setiferous punctures, both situated at the median side of 3rd stria; the anterior puncture located at or slightly in front of middle, the posterior about at basal fifth or sixth. Marginal channel with 13-14 setiferous punctures, series slightly interrupted behind middle, punctures fine. Two additional setiferous punctures located near apex at the ends of striae 2 and 3. Intervals impunctate, with fine, superficial microreticulation consisting of transverse meshes. Surface rather glossy.

Posterior wings. Fully developed.

Lower surface. Metepisternum elongate, slightly > 2 x as long as wide at apex.

Male genitalia (Fig. 7). Genital ring wide, asymmetric, with asymmetric, wide, oblique

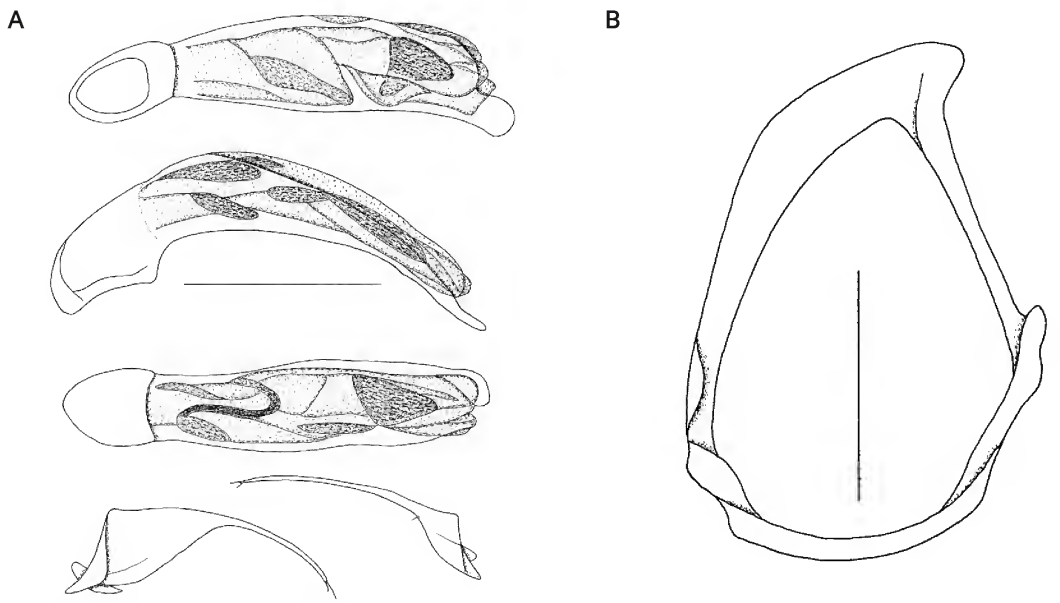

FIG. 7. A-B, *Dystrichothorax wrightae* sp. nov. **A**, male genitalia; **B**, genital ring

apex and angulate, produced lateral angle. Aedeagus moderately elongate, slightly widened in middle and slightly sinuate, apex situated on the right side, slightly turned right, though tip markedly curved left. Lower surface basally straight, in apical third gently concave. Apex short (in group), wide, widely rounded at tip, very asymmetric. Tip sclerotized. Internal sac with sme elongate sclerotized plates in basal part, and with a characteristic, multidenticulate, sclerotized plate at bottom near apex. Both parameres very elongate, with narrow and elongate apex. Right paramere with 2 short apical setae, and with a single, very short seta in middle of lower margin. Left paramere larger and at base much wider than right, apex barely curved, with 2 short apical setae, without additional setae.

Female genitalia. Very similar to those in figs 136-146 in Baehr (2005).

Variation. Apart from minor differences in shape of pronotum, length of elytra, and depth and punctation of the elytral striae very little variation noted

Distribution. The Border Ranges between Queensland and New South Wales.

Collecting circumstances. Sampled by 'barkspray' in upland rain forest.

Relationships. According to external morphology and to shape and structure of the male aedeagus, this species is closely related to *D. catrionae* Baehr, 2005 from Acacia Creek in north-eastern NSW and *D. parallelocollis* Baehr, 2005 from Conondale Range, Mt Tamborine, and Bunya Mts in south-eastern Queensland.

Dystrichothorax capitis sp. nov.
(Figs 3, 8)

Material. HOLOTYPE: ♂, QLD: 28.298°Sx 152.430°E Plateau south of 'The Head', 1035 m, 29 Mar 2014, G.Monteith, Barkspray, rainfor25494 (QMT 234155). PARATYPES: 1 ♂, 2 ♀♀, same data (CBM, QM).

Etymology. The name refers to the type locality 'The Head' in south-eastern Queensland.

Diagnosis. Fairly large, piceous species of the *australis*-group in the sense of Baehr (2005), with moderately large eye and an elongate, conspicuously denticulate fold in the apical

part of the internal sac of the aedeagus; distinguished from the very similar *D. difficilis* Baehr, 2005 by the head being slightly paler than pronotum and elytra, and by presence of the mentioned denticulate fold.

Description. *Measurements.* Length: 7.7-7.9 mm; width: 3.1-3.2 mm. Ratios. Length eye/orbit: 2.1-2.25; width/length of pronotum: 1.27-1.28; width base/apex of pronotum: 1.52-1.62; width pronotum/head: 1.26-1.28; length/width of elytra: 1.65-1.67; width elytra/pronotum: 1.76-1.84.

Colour (Fig. 3). Head rufous, pronotum and elytra reddish-piceous to piceous, lateral margins of pronotum and elytra narrowly pale translucent; palpi and basal antennomeres more or less pale red, antenna apicad slightly darker. Legs piceous, but apex of tibiae, and tarsi paler.

Chaetotaxy. pr: 0, 1; el: 2, 0, 0; ab: 4, 8.

Head (Fig. 3). Rather large, little narrower than pronotum, frons in middle convex. Eye rather large, laterally moderately protruded. Orbit elongate, > half of length of eye, oblique, evenly merging into curvature of eye, forming a fairly distinct angle with neck. Labrum anteriorly straight. Mandibles short and wide. Submentum unisetose on either side. Tooth of mentum large, wide, rather acute. Glossa apically straight, bisetose, paraglossae hyaline, slightly surpassing glossa. Lacinia with a few strong spines. Both palpi fairly elongate, obliquely cut at apex, impilose. Antenna elongate, surpassing base of pronotum by at least three antennomeres. Median antennomeres almost 3 x as long as wide. Posterior supraorbital seta slightly removed from eye, situated well behind posterior margin of eye. Frontal furrows rather elongate, moderately deep, linear, slightly oblique and sinuate. Frons without any distinct impression in middle. Surface impunctate, without microreticulation, very glossy.

Pronotum (Fig. 3). Narrow, rather quadrate with wide base, disk rather convex, widest diameter at base, or base at least barely narrower than at middle. Apex with very shallow, straight excision, apical angle little protruded, widely rounded. Lateral margin in basal half straight or almost so, extremely slightly concave just in front of the basal angle, incurved to apex. Basal angle rectangular, laterally feebly produced. Base in middle convex, laterally oblique and slightly sinuate. Apex not margined, base coarsely margined. Marginal channel rather narrow, deep, slightly widened towards base, margin upturned. Median line distinct and slightly impressed, almost reaching apex and base. Both anterior and posterior transversal sulci very shallow. Basal grooves linear, almost straight, deep, separated from marginal channel. Posterior lateral seta arising at lateral margin on basal angle. Surface with very fine transverse strioles, with very sparse and extremely fine punctures, without microreticulation, very glossy.

Elytra (Fig. 3). Rather elongate, gently oval shaped, slightly widened posteriad, disk moderately convex. Humerus angulate, slightly protruded, basal margin gently angulate. Lateral margin at apex convex. Lateral apical fold strong. Six median striae present, 7th stria less distinct and only indicated by a row of punctures. Striae well impressed but slightly less so in basal half, finely, punctulate; intervals in basal half gently convex, in apical half convex. Disk with two setiferous punctures, both situated at the median side of 3rd stria; the anterior puncture located slightly in front of middle, the posterior about at basal fifth or sixth. Marginal channel with 13-14 setiferous punctures, series slightly interrupted behind middle, punctures fine. Two additional setiferous punctures located near apex at the ends of striae 2 and 3. Intervals impunctate, with fine, distinct microreticulation consisting of slightly transverse meshes. Surface moderately glossy.

Posterior wings. Fully developed.

Lower surface. Metepisternum elongate, slightly > 2 x as long as wide at apex.

Male genitalia (Fig. 8). Genital ring wide, asymmetric, with asymmetric, rather wide, oblique apex and angulate, produced lateral angle. Aedeagus elongate, barely widened in middle, slightly sinuate, apex situated on the right side, slightly turned right. Lower surface in basal half concave, in apical half almost straight.

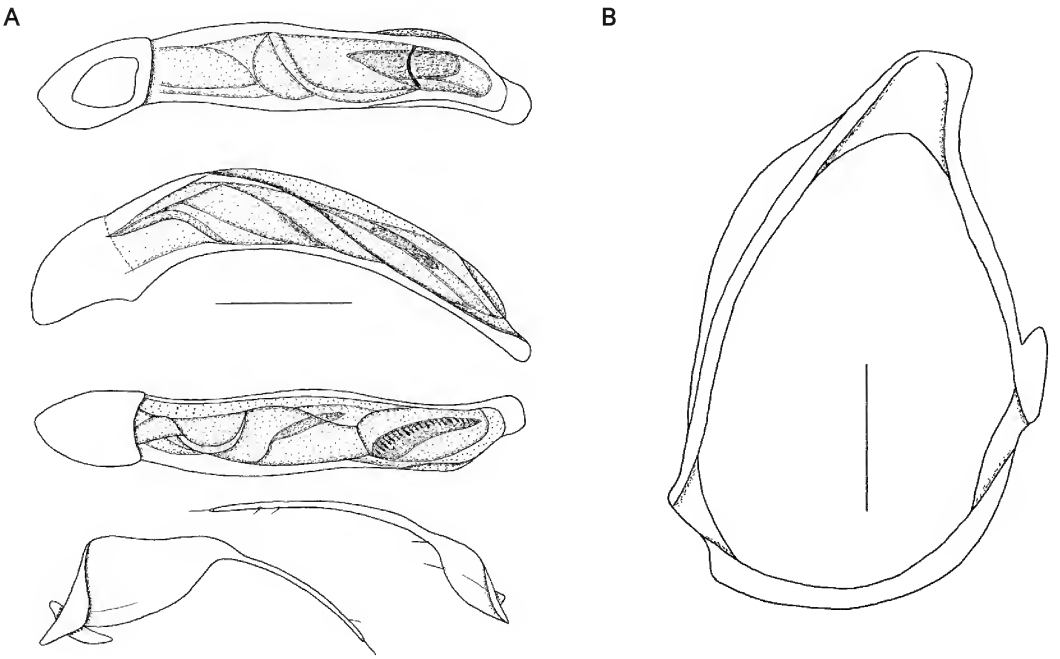

FIG. 8. A-B, *Dystrichothorax capitis* sp. nov. **A**, male genitalia; **B**, genital ring

Apex rather short, wide, somewhat spatulate, rounded at tip. Tip sclerotized. Internal sac with some elongate, gently sclerotized folds in basal part, and with a characteristic, elongate, multidentate, sclerotized plate at roof near apex. Both parameres very elongate, with narrow and elongate apex. Right paramere with 1 short apical seta, and with two short setae each on lower margin near apex and at base. Left paramere larger and at base much wider than right, apex barely curved, with 1 short apical seta, and a single, short seta on upper margin near apex.

Female genitalia. Very similar to those in figs 136-146 in Baehr (2005).

Variation. Apart from minor differences in shape of pronotum very little variation noted

Distribution. On the NSW/Qld Border Ranges, 100 km SW of Brisbane, Australia. Known only from the type locality.

Collecting circumstances. Sampled by 'barkspray in rainforest' at high altitude.

Relationships. According to external morphology and to shape of the aedeagus, this species is most similar and probably also closely related to *D. difficilis* Baehr, 2005 from Lamington NP in south-east Queensland and Dorrigo and Acacia Creek in north-eastern New South Wales.

Dystrichothorax rufinus sp. nov.
(Fig. 4)

Material. HOLOTYPE: ♀, 'NSW:30.492°Sx152.406°E New England NP, Banksia Pt, 1480 m, 14 June 2009 G.Monteith & F.Turco. Pyrethrum knockdown. Nothofagus forest 17476' (QMT 234156).

Etymology. The name refers to the red surface.

Diagnosis. Medium-sized, uniformly pale red species of the *lividus*-group in the sense of Baehr (2005) with large, well protruded eye; distinguished from all other species of this group, except *D. demarzi* Baehr, 2005 and *D. lewisensis* Baehr, 2005 from North Queensland, by unipunctate elytra. Distinguished from these

species by paler colouration and decidedly wider pronotum.

Description. *Measurements.* Length: 6.6 mm; width: 3.0 mm. Ratios. Length eye/orbit: 3.8; width/length of pronotum: 1.36; width base/apex of pronotum: 1.5; width pronotum/head: 1.30; length/width of elytra: 1.55; width elytra/pronotum: 1.97.

Colour (Fig. 4). Surface, including mouth parts, antennae, and legs uniformly pale red.

Chaetotaxy. pr: 0, 1; el: 1, 0, 0; ab: ?, 8.

Head (Fig. 4). Rather large, but considerably narrower than pronotum, frons in middle convex. Eye large, laterally markedly protruded. Orbit short, c. 1/5 of length of eye, oblique, evenly merging into curvature of eye, forming a fairly distinct angle with neck. Labrum anteriorly slightly concave. Mandibles short and wide. Submentum bisetose on either side. Tooth of mentum large, wide, rather acute. Glossa apically straight, bisetose, paraglossae hyaline, slightly surpassing glossa. Lacinia with a few strong spines. Both palpi fairly elongate, obliquely cut at apex, impilose. Antenna elongate, surpassing base of pronotum by slightly > 2 antennomeres. Median antennomeres c. 2.5 x as long as wide. Posterior supraorbital seta slightly removed from eye, situated at posterior margin of eye. Frontal furrows rather elongate, moderately deep, linear, slightly oblique and sinuate. Frons without any distinct impression in middle. Surface impunctate, without microreticulation, very glossy.

Pronotum (Fig. 4). Moderately narrow, considerably wider than long, with wide base, disk rather convex, widest diameter in middle, but base barely narrower than at middle. Apex with very shallow, straight excision, apical angle little protruded, widely rounded. Lateral margin gently convex throughout, more so in apical half, not concave in front of the basal angle. Basal angle rectangular, laterally not produced. Base in middle convex, laterally oblique and slightly sinuate. Apex not margined, base coarsely margined. Marginal channel rather narrow, deep, slightly widened towards base, margin upturned. Median line distinct and slightly impressed, almost reaching apex and base. Both anterior and posterior transversal sulci very shallow. Basal grooves linear, almost straight, deep, separated from marginal channel. Posterior lateral seta arising at lateral margin on basal angle. Surface with very fine transverse strioles, impunctate, without microreticulation, very glossy.

Elytra (Fig. 4). Rather elongate, gently oval shaped, slightly widened posteriad, disk moderately convex. Humerus angulate, slightly protruded, basal margin gently angulate. Lateral margin at apex convex. Lateral apical fold strong. Seven striae indicated but only in apical half perceptibly impressed, 7th stria less distinct and only indicated by a row of punctures. Striae barely punctulate; intervals only in apical half gently convex. Disk with one setiferous puncture, situated at apical quarter and at the median side of the 3rd stria. Marginal channel with 12-14 setiferous punctures, series slightly interrupted behind middle, punc tures fine. One additional setiferous puncture located near apex at the end of the 3rd stria. Intervals impunctate, with fine, rather superficial microreticulation consisting of slightly transverse meshes. Surface glossy.

Posterior wings. Fully developed.

Lower surface. Metepisternum elongate, slightly > 2 x as long as wide at apex.

Male genitalia. Unknown.

Female genitalia. Very similar to those in figs 136-146 in Baehr (2005).

Variation. Unknown.

Distribution. New England Tableland, north-eastern New South Wales, Australia. Known only from type locality.

Collecting circumstances. Sampled by 'pyrethrum knockdown in *Nothofagus* forest' at high altitude.

Relationships. In view of the yet unknown male genitalia the relationships are unsettled. However, in its large eyes and the unipunctate elytra the species differs from all species of the

lividus-group that occur in New South Wales and south Queensland.

Dystrichothorax trisetosus sp. nov.
(Figs 5, 9)

Material. HOLOTYPE: ♀, NSW: 30°29'42''S, 152°21'27'' Point Lookout Rd, radar beacon, 1390 m, 13-14 Nov 2008. G.Monteith. Pyrethrum, trees, open forest. (QMT 234157).

Etymology. The name refers to the presence of three setiferous punctures on the apical part of the 7th interval of the elytra.

Diagnosis. Medium-sized, uniformly rufous species of the *placidus*-group in the sense of Baehr (2005) with moderately large eye; distinguished from all species of this group, except *D. tasmaniensis* Baehr, 2005 and *D. dilatatus* (Erichson 1842) from Tasmania, by presence of 3 punctures on the apical part of the 7th interval. From *D. tasmaniensis* distinguished by larger size and lack of a dark ring on the femora; and from *D. dilatatus* by much smaller eye, wider prothorax, and unisetose 3rd interval.

Description. *Measurements.* Length: 5.6 mm; width: 2.4 mm. Ratios. Length eye/orbit: 2.9; width/length of pronotum: 1.54; width base/apex of pronotum: 1.41; width pronotum/head: 1.36; length/width of elytra: c.1.62; width elytra/pronotum: c.1.68.

Colour (Fig. 5). Surface, including mouth parts and antenna, pale rufous, legs dark yellow. Lateral margins of pronotum and elytra barely lighter.

Chaetotaxy. pr: 0, 1; el: 1, 0, 3; ab: ?, 6.

Head (Fig. 5). Rather large, but considerably narrower than pronotum, frons in middle convex. Eye large, laterally well protruded. Orbit rather short, c. 1/3 of length of eye, oblique, evenly merging into curvature of eye, forming a fairly distinct angle with neck. Labrum anteriorly straight. Mandibles short and wide. Submentum apparently asetose. Tooth of mentum large, wide, rather acute. Glossa apically straight, bisetose, paraglossae hyaline, slightly surpassing glossa. Lacinia with a few strong spines. Both palpi rather short, obliquely cut at apex, impilose. Antenna fairly elongate, surpassing base of pronotum by slightly < two antennomeres. Median antennomeres c. 2 x as long as wide. Posterior supraorbital seta slightly removed from eye, situated slightly behind posterior margin of eye. Frontal furrows rather elongate, moderately deep, linear, oblique and sinuate. Frons without any distinct impression in middle. Surface impunctate, without microreticulation, very glossy.

Pronotum (Fig. 5). Fairly wide, considerably wider than long, with wide base, disk rather convex, widest diameter in middle. Apex with very shallow, almost straight excision, apical angle little protruded, widely rounded. Lateral margin gently convex throughout, more so in apical half, very slightly concave in front of the basal angle. Basal angle rectangular, laterally very slightly produced. Base in middle convex, laterally oblique and slightly sinuate. Apex not margined, base coarsely margined. Marginal channel moderately wide, deep, barely widened towards base, margin upturned. Median line distinct and slightly impressed, almost reaching apex and base. Anterior transversal sulcus very shallow, posterior sulcus moderately impressed. Basal grooves linear, almost straight, deep, separated from marginal channel. Posterior lateral seta arising at lateral margin on basal angle. Surface with very fine transverse strioles, with scattered, extremely fine, barely perceptible punctures, without microreticulation, very glossy.

Elytra (Fig. 5). Moderately elongate, gently oval shaped, slightly widened posteriad, disk moderately convex. Humerus angulate, slightly protruded, basal margin gently angulate. Lateral margin at apex convex. Lateral apical fold strong. Seven striae distinct and well impressed, even 7th stria slightly < impressed. Striae rather coarsely punctate; intervals gently convex. 3rd interval with one setiferous puncture, situated slightly behind the apical quarter and at the median side of the 3rd stria. 7th stria with three punctures in apical fifth. Marginal channel with 13-14 setiferous punctures, series slightly interrupted behind middle, punctures fine. Apparently one additional setiferous puncture located near apex at the end of the 3rd stria. Intervals with

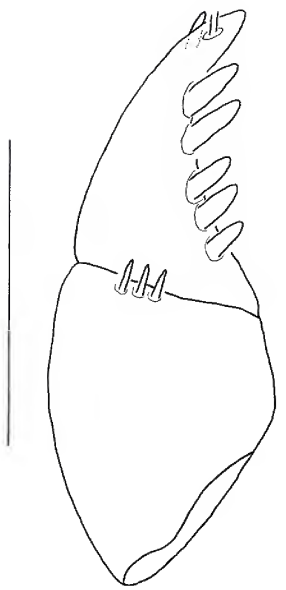

FIG. 9. *Dystrichothorax trisetosus* sp. nov. Female gonocoxites 1 and 2. Scale bar: 0.2 mm.

a series of extremely fine punctures, with fine, rather superficial microreticulation consisting of fairly transverse meshes. Surface moderately glossy.

Posterior wings. Fully developed.

Lower surface. Metepisternum elongate, c. 2 x as long as wide at apex.

Male genitalia. Unknown.

Female genitalia (Fig. 9). Gonocoxite 1 with three small ensiform setae at apical margin. Gonocoxite 2 elongate, curved, with rather acute apex; with one elongate dorso-median ensiform seta close to apex, 5 large, ventro-lateral ensiform setae along the lateral margin, and two very short nematiform setae near apex, originating from a pit. Lateral plate on ventro-apical part densely packed with many short ensiform setae.

Variation. Unknown.

Distribution. New England Tableland, north-eastern New South Wales, Australia. Known only from type locality.

Collecting circumstances. Sampled by pyrethrum on trees in open forest at high altitude.

Relationships. In view of the yet unknown male genitalia the relations of this species are unsettled.

Remarks. The biology of the new species is barely recorded. However, because all specimens have been sampled by pyrethrum fogging or 'barkspray' on tree trunks, they all seem to be arboricolous and corticolous species like their congeners. Most specimens have been collected in *Nothofagus* forest or unspecified rain forest, where they may live under bark. All species have been sampled at rather high to high altitudes from about 700 m up to more than 1400 m.

The present paper therefore demonstrates that the species inventory of Australian Amblytelina is by no means complete, in spite of the recent revision (Baehr, 2005) that included almost all specimens then present in the Australian and various overseas collections. The fact that, even in well collected areas such as south-eastern Queensland and north-eastern New South Wales, additional species are still being discovered, confirms this opinion. Certainly the method of spraying bark of rain forest trees is the best way to detect additional species, because prior to the application of this method most described amblyteline species had been found by bark peeling of bark-shedding eucalypts in open forest and woodland.

Despite improved taxonomic knowledge of these beetles, little has been recorded about their ecology, ethology, and reproduction. Because amblyteline beetles are rarely found at night at light, they don't seem to be nocturnal animals. However, even on densely populated trees (in open forest and woodland) during daytime they are very rarely seen on the bark or trunk surface. For rain forest inhabiting species even less is known about their habits.

Another unsolved question is the reason for the degree of brightness in the colour patterns of a number of species, e.g. the conspicuously striped elytra of many species. Striking colour patterns seem less

common in rain forest inhabiting species than in those living under the bark of eucalypts in open forest. Such striped species are commonly found in communities with a number of lebiine species from various genera (*Agonocheila, Demetrida, Philophloeus, Phloeocarabus, Trigonothops*) and with species of the cyclosomine genus *Sarothrocrepis*, all of which commonly possess similar colour patterns. The meaning of these similarities is likewise unknown.

KEYS

The species are introduced into the respective keys in the revision (Baehr 2005). Figures in the revision are cited as Ba2005 fig.

Amblytelus suturalis

When using the key for the genus *Amblytelus*, according to body shape, chaetotaxy, length of elytra, and shape of aedeagus, couplet 44 is reached which must be changed as following:

44 Body distinctly bicoloured, head and pronotum rufous, elytra dark piceous with conspicuous red suture and lateral margin (Ba2005 fig. 176); eye smaller, ratio eye/orbit <3; aedeagus with laterally sharply angulate apex (Ba2005 fig. 52). e. VIC, ACT ..... *matthewsi* Baehr, 2005

— Body not distinctly bicoloured, but elytra with or without a sutural spot (Fig. 1; Ba2005 figs 170, 173); eye larger, ratio eye/orbit >3.5; aedeagus with laterally rounded apex (Fig. 6; Ba2005 fig. 47), or unknown ..... 45.

45 Elytra with distinct pale sutural spot (Fig. 1); eye larger, ratio eye/orbit > 5.5; aedeagus with less curved apex (Fig. 6). ne. NSW ..... *suturalis* sp. nov.

— Elytra at most with inconspicuous sutural spot (Ba2005 fig. 170); eye smaller, ratio eye/orbit < 4.0; aedeagus with more curved apex (Ba2005 fig. 47), or unknown, in latter species elytra unicolourous. ce. NSW, sw. Tas ..... 45a.

45a = 45. in Baehr (2005).

Dystrichothorax wrightae and *D. rufinus*

When using the key for the genus *Dystrichothorax*, according to body shape, chaetotaxy, colour, and shape of aedeagus couplet 43 is reached which must be changed as following:

43 Elytra unipunctate and colour uniformly pale rufous and prothorax rather wide, ratio w/l > 1.36 and elytra rather short, ratio l/w 1.55 (Fig. 4) ..... *rufinus* sp. nov.

— Elytra uni- or bipunctate; but when unipunctate, colour darker, prothorax narrower, ratio w/l < 1.28, and elytra longer, ratio l/w > 1.58, usually more ..... 43a.

43a Aedeagus remarkably compact, wide, distinctly widened in middle; margin on left side in front of apex very deeply excised, apex short, tip curved to left side (Ba2005 figs 94, 95) ..... .44.

— Aedeagus less compact, narrower, not or barely widened in middle; margin on left side in front of apex less deeply excised, apex commonly longer, tip less markedly curved to left side (Fig. 7; Ba2005 figs 90-92, 96, 97) ..... 45.

45 Apical half of internal sac with large, conspicuously denticulate sclerite at roof (Fig. 7; Ba2005 fig. 92); elytral striae rather deeply impressed, intervals in basal half perceptibly convex ..... .45a.

— Apical half of internal sac with two small, denticulate sclerites at roof and at bottom (Ba2005 figs 91, 96), or without denticulate sclerites (Ba2005 figs 90, 97); elytral striae usually less deeply impressed, intervals in basal half but slightly convex, or depressed ..... 46.

45a Margin on left side of aedeagus in front of apex moderately excised (Ba2005 fig. 92); pronotum laterally more oblique, slightly wider; elytra slightly shorter, striae deeper and intervals in basal half more convex. ne. NSW ..... *catrionae* Baehr, 2005

— Margin on left side of aedeagus in front of apex deeply excised (Fig. 7); pronotum laterally straight, slightly narrower; elytra slightly longer, striae less deep

and intervals in basal half little convex. se. QLD. . . . . *wrightae* sp. nov.

46 As in Baehr (2005).

Dystrichothorax capitis

When using the key for the genus *Dystrichothorax*, according to body shape, chaetotaxy, colour, and shape of aedeagus couplet 37 is reached which must be changed as following:

37 Pronotum narrow, ratio w/l <1.20; base relatively narrow, ratio b/a <1.49; margin on left side of aedeagus near apex deeply sinuate, apex slightly hook-shaped, turned right and curved up (Ba2005 fig. 93). Lamington Plateau, se. QLD . . . . . *hamifer* Baehr, 2005

– Pronotum wider, ratio w/l >1.20; base wider, ratio b/a >1.52; either aedeagus narrow and elongate, with more or less evenly tapering apex (Fig. 8; Ba2005 fig. 88), or unknown. . . . . 38.

38 Lateral margins of pronotum almost straight, base of pronotum about as wide as in middle, or even wider (Fig. 3; Ba2005 fig. 219); elytral striae distinctly impressed, intervals convex even in basal half; aedeagus narrow and elongate (Fig. 8; Ba2005 fig. 88). ne. NSW, se. QLD . . . .38a.

– Lateral margins of pronotum perceptibly convex, base of pronotum distinctly narrower than in middle (Ba2005 fig. 228); elytral striae but slightly impressed, intervals in basal half little convex; aedeagus unknown. Richmond Range, extreme ne. NSW . . . . . *piceus* Baehr, 2005

38a Head not perceptibly paler than pronotum and elytra; aedeagus with evenly tapering apex, without a denticulate fold in apical part (Ba2005 fig. 88). ne. NSW, se. QLD . . . . . *difficilis* Baehr, 2005

– Head perceptibly paler than pronotum and elytra (Fig. 3); aedeagus with slightly excised apex, with a denticulate fold in apical part (Fig. 8). se. QLD. . . . . *capitis* sp. nov.

Dystrichothorax trisetosus

When using the key for the genus *Dystrichothorax*, according to chaetotaxy couplet 17 is reached which must be changed as following:

17 Elytral interval 7 multisetose; either both parameres very elongate (Ba2005 fig. 100), or, in case of unknown male genitalia, body size larger, length > 5.6 mm. 18

– Elytral interval 7 unisetose; either both parameres short (Ba2005 figs 101, 102), or, in case of unknown male genitalia, body size smaller, length <5.4 mm. 19

18 Body size smaller, length < 5.3 mm; femora with conspicuous dark ring; aedeagus and parameres as in Ba2005 fig. 100. TAS . . . . . *tasmaniensis* Baehr, 2005

– Body size larger, length > 5.6 mm; femora without such dark ring; aedeagus unknown 18a

18a Body size larger, length c. 5.9 mm; eye very large, ratio length eye/orbit c. 5.0; prothorax narrower, ratio w/l 1.42; 3rd interval impunctate; gonocoxites unknown. TAS . . . . . *dilatatus* (Erichson, 1842)

– Body size smaller, length c. 5.6 mm; eye smaller, ratio length eye/orbit c. 2.9; prothorax wider, ratio w/l 1.54; 3rd interval unipunctate; gonocoxite 2 with five ventro-lateral ensiform setae (Fig. 9). ne. NSW . . . . . *trisetosus* sp. nov.

19 As in Baehr (2005)

ACKNOWLEDGEMENTS

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